



Quality Enhancement Research Initiative

## Spinal Cord Injury

### Spinal Cord Injury

There are between 183,000 and 230,000 people with spinal cord injury (SCI) in the United States and about 22% of them are veterans. Each year 11,000 new cases of SCI afflict people at an average age of 32 years old, thus most SCI patients require long-term specialized care. The estimated lifetime costs for a 25 year old with a high-level injury that results in quadriplegia, for example, is over \$2.1 million (NSCISC, May 2001<sup>1</sup>). Given the high economic and human costs of SCI, these cases are a major focus of VA care and research. The Spinal Cord Injury Quality Enhancement Research Initiative (SCI QUERI) was created to employ the QUERI process (see back page) to identify and address gaps in current knowledge about SCI treatment and to use evidence-based findings to develop guidelines that improve the quality of care for veterans with spinal cord injury.

Since its inception in 1998, SCI QUERI has focused on building an infrastructure

to support SCI research, dissemination, and translation efforts. During this time, they have identified several important findings in the literature that are ready to be translated to “front-line” clinicians who treat veterans with spinal cord injury. Areas of particular emphasis include secondary medical complications: respiratory impairments, pressure ulcers, and urinary tract infections (UTI<sup>2</sup>). In addition, research on the implementation of Clinical Practice Guidelines (CPGs) for SCI is underway, and evaluation of patient outcomes following CPG implementation is in progress.

### Translating Research into Practice

For the past year, SCI QUERI has focused its translation efforts on the improvement of influenza vaccination rates to prevent influenza and related respiratory infections in persons with SCI. Respiratory disease is now the leading cause of mortality in the SCI population after the first year of injury.<sup>3</sup> In earlier work, DeVivo and colleagues reported that persons with SCI who contracted influenza or pneumonia have a 37% higher likelihood of death.<sup>4</sup> Thus, vaccination to prevent influenza and its complications is critical in this high-risk population.

Although the Centers for Disease Control and Prevention (CDC) and literature about influenza have not specifically identified SCI as a high-risk group for complications from influenza, recent data suggests that influenza vaccination could have a positive impact on SCI patient morbidity and mortality. Data from VHA, using the External Peer Review Program (EPRP) methodology, indicate that national influenza vaccination rates for SCI veterans between 1996 and 2001 have been improving but remain low. Although underreporting may account for these low vaccination rates, in part, there is significant room for improvement.

SCI QUERI investigators identified barriers and facilitators to providing influenza vaccination in the VA SCI health care system and the SCI population and incorporated these findings into a multi-pronged pilot project at four SCI Centers. The intervention included patient and clinician mailed reminders and educational materials, as well as the use of local clinical champions to support vaccination efforts. Important findings of this project included: 1) self-reported vaccination rates in the pilot sites were significantly higher than in comparison sites, indicating that this modest

<sup>1</sup> National Spinal Cord Injury Statistical Center; Birmingham, Alabama, “Spinal Cord Injury: Facts and Figures at a Glance”, May 2001.

<sup>2</sup> Consortium for Spinal Cord Medicine (CSCM). Pressure ulcer prevention and treatment following spinal cord injury: A clinical practice guideline for health-care professionals. Support provided by PVA, August, 2000.

<sup>3</sup> DeVivo MJ, Black KJ, Stover SL. Causes of death during the first 12 years after spinal cord injury. *Archives of Physical Medicine and Rehabilitation* 1993;74:248-254.

<sup>4</sup> DeVivo MJ, Krause JS, Lammertse DP. Recent trends in mortality and causes of death among persons with spinal cord injury. *Archives of Physical Medicine and Rehabilitation* 1999;80:1411-1419.

### The SCI QUERI Executive Committee:

Each QUERI Executive Committee is co-chaired by a research expert and a clinician. The SCI QUERI Research Coordinator is **Frances Weaver, PhD**, and the Co-Clinical Coordinators are **Barry Goldstein, MD, PhD** and **Margaret Hammond, MD**. SCI QUERI's Executive Committee includes 12 other experts in the field of spinal cord injury: Charles Bugar, MD, Stephen Burns, MD, Kurt Fiedler, MD, Susan Garber, MA, OTR, FAOTA, Helen Hoenig, MD, W. Edwin Langbein, PhD, **Marcia Legro, PhD** (Translation Coordinator), Audrey Nelson, PhD, RN, Michael Priebe, MD, Arthur M. Sherwood, PE, PhD, Thomas Stripling, BA, and Deborah Wilkerson, MA.

intervention was effective; 2) younger patients and some minority groups had significantly lower vaccination rates, suggesting that these sub-groups need special attention; and 3) chart review data indicated lower vaccination rates than self-reported rates, suggesting documentation issues exist. The results of this project have been used to develop a new project. A national roll-out involving all 23 VA SCI Centers for both influenza and pneumococcal vaccinations is in process. This effort will include the use of system changes including standing orders and computerized clinical reminders.

## **Significant SCI QUERI Findings and New Projects**

Here are a few of the important areas of SCI QUERI research:

- *Integrating clinical practice guidelines:* The study “A Process and Outcome Evaluation of Spinal Cord Clinical Practice Guidelines” was recently completed and conclusions based on the study were used to brief the Steering Committee of the SCI Medicine Consortium regarding new CPG development. Suggestions
- *Pressure Ulcers:* SCI QUERI staff have been involved in the development of two HSR&D IIRs focused on pressure ulcers, a major problem in individuals with SCI. One proposed study will target those persons with SCI who are hospitalized for treatment of a severe (Stage III or IV) pressure ulcer. The five-site study was designed to examine the impact of a standardized education and structured follow-up program on recurrence rates and time to recurrence. Another study in development will focus on implementing four recommendations from the Pressure Ulcer Prevention and Treatment CPG (CSCM, 2000). It is expected that this project will also involve multiple sites.
- *Respiratory complications:* SCI QUERI is focusing efforts on respiratory complications. Topics of importance in respiratory care include pulmonary management, impaired cough, clearing secretions, sleep apnea, and prevention of secondary complications.

## **Quality Enhancement Research Initiative**

QUERI currently focuses on eight conditions that are prevalent and high-risk among veteran patients: Colorectal Cancer, Chronic Heart Failure, Diabetes, HIV/AIDS, Ischemic Heart Disease, Mental Health, Spinal Cord Injury, and Substance Abuse.

## **The QUERI Process**

The QUERI process includes six steps:

- 1) identify high-risk/high-volume diseases or problems;
- 2) identify best practices;
- 3) define existing practice patterns and outcomes across VA and current variation from best practices;
- 4) identify and implement interventions to promote best practices;
- 5) document that best practices improve outcomes; and
- 6) document that outcomes are associated with improved health-related quality of life and systems improvements.

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**VA's Research and Development QUERI Website:** <http://www.va.gov/resdev/queri.htm>  
**SCI QUERI direct web link:** <http://www.sci-queri.research.med.va.gov/>